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Examiner: Lambkin, D.C. **Group:** 1626

Date: September 6, 2006

Client Code: 3211

Facsimile No.: 571-273-8300

From: Pamela A. Torpey, Patent Agent

Subject:

Papers: Request for Reconsideration of Patent Term Adjustment Under
1.705(d) and Exhibits A-H

Docket No.: 3211.1002-021

Applicants: Shoujun Chen, Lijun Sun, Zhi-Qiang Xia, Keizo Koya and Mitsunori Ono

Serial No.: 10/807,919

Filing Date: March 24, 2004

Number of pages including this cover sheet: 15

Please confirm receipt of facsimile: Yes XXX No

Comments:

@PFDctsktopi ODMA\MHODMA\HBSR05\Managc.048169.1

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SEP 06 2006 1-978-341-0242

T-069 P.02/15 F-253

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SGD/PAT/mdm
September 6, 2006

PATENT APPLICATION
Attorney's Docket No. 3211.1002-021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Shoujun Chen, Lijun Sun, Zhi-Qiang Xia, Keizo Koya and Mitsunori Ono

Application No.: 10/807,919

Group: 1626

Filed: March 24, 2004

Examiner: Lambkin, D.C.

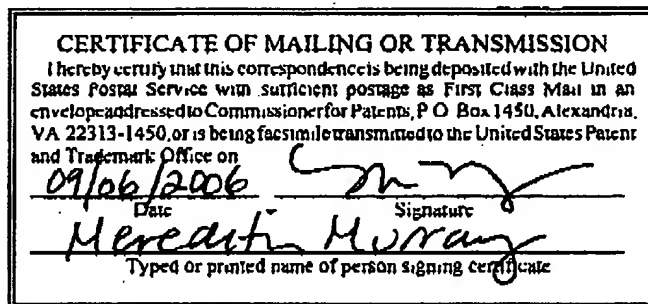
Confirmation No.: 3975

U.S. Patent No.: 7,074,952 B2

Issue Date: July 11, 2006

For: SYNTHESIS OF TAXOL ENHANCERS

24



REQUEST FOR RECONSIDERATION OF
PATENT TERM ADJUSTMENT UNDER 1.705(d)

Mail Stop PETITIONS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a Request for Reconsideration of the Patent Term Adjustment (PTA) of the above-identified patent. The Correct Patent Term Adjustment should be 41 days. The Issue Notification incorrectly notes 17 days. Applicants respectfully request reconsideration and correction of the Patent term to 41 days. A Statement of the Facts with supporting evidence is provided herein in support of the Request.

09/08/2006 TBESHAH2 00000056 000380 7074952

Please charge the \$200 fee under 37 C.F.R. § 1.18(e) as required and any deficiencies or other fees which may be due in this matter, to Deposit Account No. 08-0380.

-2-

Calculation of Patent Term Adjustment

37 C.F.R. § 1.702(a)(1): Grounds for adjustment of patent term due to examination delay under the Patent Term Guarantee Act of 1999 (original applications, other than designs, filed on or after May 29, 2000) (a) failure to take certain actions within specified time frames, (1) mail at least one of a notification under 35 U.S.C. § 151 not later than fourteen months after the date on which the application was filed under 35 U.S.C. § 111(a) or fulfilled the requirements of 35 U.S.C. § 371 in an international application.

37 C.F.R. § 1.704(b): Reduction of period of adjustment of patent term (b) ...in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant . .

**STATEMENT OF FACTS OF PATENT TERM ADJUSTMENT UNDER
37 C.F.R. § 1.702(a)(1) and 37 C.F.R. § 1.704(b)**

Filing Date: March 24, 2004

Please see **Exhibits A & B**: the return postcard as filed with the application (stamped with the Filing Date by the U.S. Patent and Trademark Office) and the Official Filing Receipt (also verifying the Filing Date).

Date of the First Notice of Allowance: July 5, 2005

Please see **Exhibit C**: the First Notice of Allowance.

The First Notice of Allowance was dated July 5, 2005, which makes the PTA total (+)42 days (May 25, 2005 to July 5, 2005).

Due Date for filing the Request for Continued Examination (RCE): October 5, 2006

Please see **Exhibit D**: the stamped return postcard showing a date of receipt of RCE in the U.S. Patent and Trademark Office of October 6, 2006. Therefore, the PTA should be adjusted by (-1) day, which makes the PTA Total 41 days.

-3-

Second Notice of Allowance

Applicants direct the Office's attention to **Exhibit E**: the correct Patent Term Adjustment (PTA) of 41 days was indicated in the Second Notice of Allowance, dated January 31, 2006.

Payment of the Issue Fee

The issue and publication fees were mailed to the U.S. Patent and Trademark Office on April 19, 2006. The payment was received by the U.S. Patent and Trademark Office on April 24, 2006. Please see **Exhibit F**: the stamped return postcard evidencing the date of receipt of the issue fee. The issue fee was due on May 1, 2006. The payment was received on April 24, 2006, in advance of the due date and thus no adjustment should be made.

THE ISSUE NOTIFICATION AND ISSUED PATENT INCORRECTLY STATE 17 DAYS

Issue Notification

The Issue Notification (**Exhibit G**) indicates that the PTA is 17 days, not 41 as was calculated.

Issued Patent

The Issued Patent (**Exhibit H**) indicates that the PTA is 17 days.

The Patent Term Adjustment in Patent Application Information Retrieval (PAIR) indicates that the difference of 24 days was due to Issue per payment Verification. In view of the above, specifically the receipt date of the issue fee postcard, Applicants believe this is in error and the PTA is 41 days.

-4-

CONCLUSION

In view of the above information, Applicants respectfully request that the Patent Term be adjusted to the correct total of 41 days. If further clarification is need, the Office of Petitions is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Pamela A Torpey
Pamela A. Torpey
Registration No. 45,736
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: September 6, 2006

Initials: SGD/PAT/kaf Docket No.: 3211.1002-021 Date: March 24, 2004
 This acknowledges receipt of X CONTINUATION DIVISION 53(b) as follows:
X Application Transmittal Express Mail Label No. EV 052029353 US
 Fee Transmittal w/copy. Statement of S/E Status
X Specification - Total pages 48 Drawings - Total sheets
 Executed Declaration for Patent Application - Total pages
 Executed POA by Assignee Applicant/Inventor No. of Docs.
 Priority Claim Under 35 U.S.C. §119, separate paper
X Copy of executed Declaration/POA from prior Application No. 10/193,076
 Assignment w/Recordation Sheet w/postcard
X Information Disclosure Stmt. w/copy
X Form PTO-1449 pp. 4 with references as noted in 1449
X Other Remarks/Change of Correspondence Address: Copy of current claims for
10/193,076 22856 U.S. PTO
 Check (\$) Authorization to Charge all Fees 10/807919
 Applicants: Shoujun Chen *et al.*
X Continuation Division of Application No. 10/193,076
 Title: Synthesis of Taxol
 032404
 8PFDuaktop\...C:\MSD\MSD\HBSR05\Manage\461300\1
 Date received by the PTO:

EXHIBIT

A

2,074,952



UNITED STATES PATENT AND TRADEMARK OFFICE

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SGD
PAT

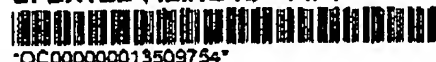
APPL NO	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/807,919	03/24/2004	1626	990	3211.1002-021		25	2

CONFIRMATION NO. 3976

021005

HAMILTON, BROOK, SMITH & REYNOLDS, P C
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

UPDATED FILING RECEIPT



OC000000013509754

Date Mailed: 08/11/2004

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Shoujun Chen, Billerica, MA;
Liyun Sun, Harvard, MA;
Zhi-Qiang Xia, Dedham, MA;
Keizo Koya, Brookline, MA;
Mitsunori Ono, Lexington, MA.

Assignment For Published Patent Application

Synta Pharmaceuticals Corp., Lexington, MA.

Domestic Priority data as claimed by applicant

This application is a CON of 10/193,076 07/10/2002
which claims benefit of 60/304,318 07/10/2001

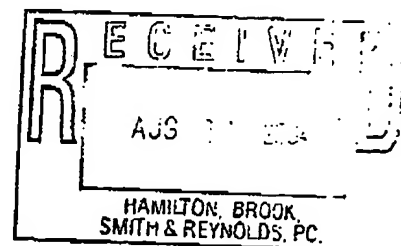
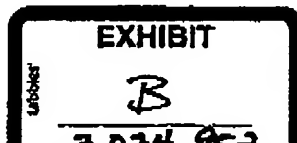
Foreign Applications

If Required, Foreign Filing License Granted: 06/04/2004

Projected Publication Date: 11/18/2004

Non-Publication Request: No

Early Publication Request: No



Title

Synthesis of taxol enhancers

Preliminary Class

514

**LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15**

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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NOT GRANTED

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NOTICE OF ALLOWANCE AND FEE(S) DUE

SEP 06 2006

021005

7590

07/05/2005

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 530 VIRGINIA ROAD
 P.O. BOX 9133
 CONCORD, MA 01742-9133

EXAMINER

LAMBKIN, DEBORAH C

ART UNIT

PAPER NUMBER

1626

DATE MAILED: 07/05/2005

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO.
10/807,919	03/24/2004	Shoujun Chen	3211.1002-021	3975

TITLE OF INVENTION SYNTHESIS OF TAXOL ENHANCERS

APPLN TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	10/05/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

Page 1 of 3

PTOL-85 (Rev. 12/04) Approved for use through 04/30/2007



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Initials: SGD/PAT/mdm

Docket No.: 3211.1002-021

Date: 10/04/2005

This is to acknowledge receipt of the following documents each filed under Certificate of Mailing
Procedure 37 C.F.R. 1.8:

☒ Request for Continued Examination (RCE) Transmittal w/copy
☒ Amendment/Reply ☒ Trans. Fee Ltr. w/copy
☐ Pet. Ext of Time included in Fee Letter ☐ Sep. Pet Ext Time w/copy
☐ Affidavit/Declaration ☐ documents
☒ Supplemental IDS w/PTO-1449 1 (pg.) ☒ w/cited refs. (AY2-473)
☒ Check (\$ 790) ☐ Authorization to Charge all Fees
☐ Other _____

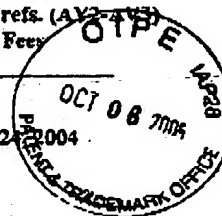
Applicants: Shonjun Chen, et al.

Application No.: 10/807,919

Filed:

March 2, 2004

Title: SYNTHESIS OF TAXOL ...



Date received by the PTO:

@PFDDesktop:ODMA/MHODMA/HBSR05, Manager: 578604:1

EXHIBIT

D

7,034,952



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EXAMINER

LAMBAIN, DEBORAH C

ART UNIT

PAPER NUMBER

1020

DATE MAILED: 01/31/2006

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
12/807,919	03/24/2004	Shuqun Chen	3211 1002-021	3975

TITLE OF INVENTION: SYNTHESIS OF TAXOL ENHANCERS

APPLN TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	05/01/2006

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

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If the SMALL ENTITY is shown as NO.

A. Pay TOTAL FEE(S) DUE shown above, or

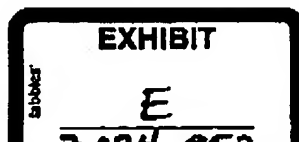
B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

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PTOL-85 (Rev. 07/05) Approved for use through 04/30/2007



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,919	03/24/2004	Shoujun Chen	3211.1002-021	3975
021005	7590	01/31/2006	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			LAMBRIN, DEBORAH C.	
			ART UNIT	PAPER NUMBER
			1626	

DATE MAILED 01/31/2006

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b).
(application filed on or after May 29, 2000).

The Patent Term Adjustment to date is 41 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 41 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Initials: SGD/PAT/mam Docket No.: 3211.1002-021 Date: 04-19-2006

This is to acknowledge receipt of the following documents each filed under Certificate of Mailing Procedure 37 C.F.R. 1.3:

☒ ISSUE FEE TRANSMITTAL w/copy
☒ Includes Publication Fee
 Statement of Small Entity
☒ Check for \$ 1745.00 Transmittal of Replacement Drawings
 DRAWINGS () Sheets
☐ Notification of Request for Removal of Small Entity Status
☐ Notification of Change to Small Entity Status
☐ Transmittal of Issue Fee Payment and Small Entity Statement
☐ Authorization to Charge Fees
☐ Other

Applicants: Shoujun Chen, et al
 Application No.: 10/807,919 Filed: March 24, 2004
 Title: SYNTHESIS OF TAXOL ...
 Date of Allowance: January 31, 2006
 Date received by the PTO:



@PFD\expt\ODMA\HODMA\HBSR05.04\img.619653.1

EXHIBIT

F

7,074,952



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APPLICATION NO	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO
107807,919	07/11/2006	7074952	3211.1002-021	3975

21005 7590 06/21/2006

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

530 VIRGINIA ROAD

P.O. BOX 9133

CONCORD, MA 01742-9133

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 17 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

APPLICANT(s) (up to 18 names are included below, see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Shoujun Chen, Billerica, MA;
Lijun Sun, Harvard, MA;
Zhi-Qiang Xia, Dedham, MA;
Keizo Koya, Brookline, MA;
Mitsunori Ono, Lexington, MA;

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HAMILTON, BROOK
SMITH & REYNOLDS, P.C.

EXHIBIT

6

7.074.952

(12) **United States Patent**
Chen et al.

(10) Patent No.: **US 7,074,952 B2**
(45) Date of Patent: **Jul. 11, 2006**

(54) **SYNTHESIS OF TAXOL ENHANCERS**

(75) Inventors: Shoujun Chen, Billerica, MA (US);
Lijun Sun, Harvard, MA (US);
Zhi-Qiang Xia, Dedham, MA (US);
Keizo Koya, Brookline, MA (US);
Mitsunori Ono, Lexington, MA (US)

(73) Assignee: Synta Pharmaceuticals, Corp.,
Lexington, MA (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 17 days

(21) Appl. No.: 10/807,919

(22) Filed: Mar. 24, 2004

(65) **Prior Publication Data**
US 2004/0229952 A1 Nov. 18, 2004

Related U.S. Application Data

(63) Continuation of application No. 10/193,076, filed on
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A61K 31/16 (2006.01)

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514/599

(58) Field of Classification Search 560/174,
564/74; 514/529, 599
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,826,866 A * 5/1989 Taylor et al. 514/403
5,300,278 A * 4/1994 Pasquolini et al. 534/14
5,753,200 A * 5/1998 Zotosochun et al. 423/519
5,843,400 A * 12/1998 Fujibayashi et al. 424/1 65
6,013,836 A 1/2000 Hsu et al.
6,172,108 B1 1/2001 Vega et al.
6,172,188 B1 1/2001 Thastrup et al.
6,235,787 B1 5/2001 Broadhurst et al.
6,365,745 B1 4/2002 Matsui et al.
6,399,659 B1 6/2002 Usui et al.
6,656,971 B1 12/2003 Wu et al.
6,762,204 B1 * 7/2004 Koya et al. 514/599
6,800,660 B1 * 10/2004 Koya et al. 514/614
6,825,235 B1 * 11/2004 Chen et al. 514/599
6,897,335 B1 * 5/2005 Okabe et al. 560/174

FOREIGN PATENT DOCUMENTS

CH 482394 A 12/1969

OTHER PUBLICATIONS

Greene, T. W. et al., "Protection For The Carboxyl Group,"
Protective Groups in Organic Synthesis, Third Edition, 5,
pp 369-453.

Greene, T. W. et al., "Protection For The Amino Group,"
Protective Groups in Organic Synthesis, Third Edition, 7,
pp 494-653.

Henderson, N. D. et al., "Synthesis of new bifunctional
compounds which selectively alkylate guanines in DNA,"
Anti-Cancer Drug Design, 13:749-768 (1998)

Metzner, P. et al., "Sulfur Reagents in Organic Synthesis,"
Best Synthetic Methods, pp. 30-185.

"Activating Agents and Protecting Groups," *Handbook of
Reagents for Organic Synthesis*, pp 133-135

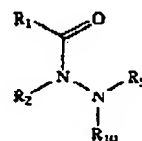
(Continued)

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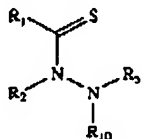
(57) **ABSTRACT**

Disclosed is a method of preparing a thiohydrazide product
compound from a hydrazide starting compound. The
hydrazide starting compound is represented by Structural
Formula (I).



(I)

The thiohydrazide product compound is represented by
Structural Formula (II):



(II)

In Structural Formulas (I)–(II), R₁ and R₂ are independently
an aliphatic group, a substituted aliphatic group, an aryl
group or a substituted aryl group, or R₁ and R₂ taken
together with the carbon and nitrogen atoms to which they
are bonded, form a non-aromatic heterocyclic ring option-
ally fused to an aromatic ring. When R₂ is an aryl group or
a substituted aryl group, then R₅ is a hydrazine protecting
group; and when R₂ is an aliphatic or substituted aliphatic
group, then R₅ is —H or a hydrazine protecting group. R₁₀
is —H or a substituted or unsubstituted alkyl group. The
method comprising the step of reacting the starting com-
pound with a thionylating reagent.

25 Claims, No Drawings

EXHIBIT

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7,074,952